Master's Thesis of Public Administration

A Study of Tourism Promotion Policies in South Korea:
Constructing an Inbound Tourist Profile

한국의 관광 진흥 정책에 관한 연구:
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Abstract

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The objective of this study was to construct an inbound tourist profile to determine the contribution of the tourism industry to the Korean economy. The contents of the profile were experimentally composed from a comparative analysis of foreign cases, and the prototype of Korean inbound tourist profile was suggested. To find a desirable profiling method, the traditional profiling method - the survey - is compared with the alternative method of using credit card data based on the policy analysis criteria. However, the utilization of credit card data is a subject of fierce debate owing to conflicts between personal information utilization and protection. As a solution to this controversy, the concept of personal information should be classified into identifiable personal information which includes personal records and particular identifying material and non-identifiable personal information that should be used for statistical purposes.

Keywords : inbound tourist profile, credit card data, personal information, identifiable personal information, non-identifiable personal information

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I. INTRODUCTION

1.1. Background

Every country competitively creates tourism policies intended to attract foreign visitors and long-haul tourists while making efforts to increase the expenditure of foreigners within its boundary. To implement these policies, most governments employ two methods. The first involves the development of new tourism resources by, for instance, excavating internationally known tourist attractions and realizing higher value-added tourism features such as long-stay business trips or medical trips. The second involves connecting existing resources (cultural heritage features such as performances, historical and artifacts) based on tourists' movement lines, compiling related data and statistics, and providing information to visitors through mass media such as Social Network Service (SNS). Additionally, both should be utilized at the same time in that they share the common goal of maximizing the expenditures of foreign visitors. However, from a convergent standpoint, the latter option appears to be more intriguing in that it offers practical insights into tourists while also expanding the scope and methods of tourism marketing. Now that the tourism industry is having a great spillover effect on the economy in the form of employment, income, production, and other areas, it is crucial not only to analyze consumption behavior and expenditure patterns but also to collect and construct data profiles in order to estimate the ranges, scales, and

characteristics of tourism industries. In this context, profiling can be identified a means of discovering the patterns or relationships in large quantities of data and compiling them into a database. Particularly, the term ‘profiles’ is used to describe these patterns or interrelationships of people. (Hildebrandt & Gutwirth, 2008). In this way, comprehensive data regarding the supply and demand of tourism is supplied to governments and travel-related industries to enable them to undertake strategic planning and to make tourism-related decisions. Being aware of the significance of data profiling, Bureaus of tourism in developed countries like U.S, U.K, Canada, Australia, EU, Singapore, and others have presented profiles of major influx countries. These profiles cover major tourism activities (e.g., lodging, transportation, food services, recreation, entertainment, retail goods and services), the amounts of travel spending, and predictions of tourism trends based on time-series analysis. In addition, most profile-producing countries have integrated extrapolations from traditional surveys and card transaction data in a convergent approach.

In the case of Korea, thus far, the government has concentrated on the quantitative growth of tourism by devising more tourism attractions on the supply side. In some ways, this has brought positive results in the form of constant increases in the volume of foreign tourists. In contrast, a platform for a comprehensive mechanism allowing governments to understand the needs of tourists from the demand side is seen to be very fragile and unreliable. The travel-relative data collected thus far, including the number of visitors, the nights stayed, and the places visited, have not provided sufficient information

on what policies the government should make to promote tourism, what strategies the private sector should pursue to develop tourism industries, and eventually how much tourism can contribute to the growth of the economy. To be specific, given that no detailed data has shown travelers' movement lines, consumption behaviors, and the scale of expenditures, it is implausible to capture the economic scale, estimate spillover effect of tourism such as job creation and have an outlook to facilitate tourism industries.

Therefore, the main objective of this paper is to study how an inbound tourist profile can be constructed for Korea so as to determine tourists' economic activities. In addition, to make it statistically meaningful and informative, the contents and resources that should be included will be examined through the cases of other countries, and the methodology that should be employed to construct the profile will be analyzed with desirability and feasibility as the policy analysis criteria. Finally, as the profile data is directly extracted and aggregated from individual instances of private data, an alternative policy to coordinate the protection of personal information and its utilization will be investigated and proposed.

1.2. The Concept of an Inbound Tourist Profile

As noted earlier, profiling refers to "a set of technologies which share at least one common characteristic, i.e., the utilization of algorithms or other techniques to create, discover, or construct knowledge from very large sets of

data. These profiles are used to make decisions and generate knowledge; the correlations denote the probability that results will be identical in the future." (Hildebrandt & Gutwirth, 2008) Profiling is "a technique to gather a large volume of data and produce knowledge in the statistically meaningful patterns among data. This process, known as Knowledge Discovery in Databases (KDD), leads the profiler to detect the interrelationship of data available as profiles." (Fayyad, Piatetsky-Shapiro & Smyth 1996) In line with these definitions, Eurostat suggested that a tourism profile should cover the following issues:

> a) A definition of the travel and tourism industry and an estimate of tourist products as a whole and by single items; b) an assessment of its total macroeconomic impact in terms of income, employment, the balance of payments, and the best methodology to reach this aim. It also added that keeping up with the flow of tourists and predicting tourism trends are critical parts of not only implementing tourism policies of central and local governments but also facilitating the private sector of the tourism industry. Versatile tourism agents such as hotels, travel agencies, restaurants, and transportation facilitators would adjust their marketing strategies in accordance with forecasts of the inbound tourist data profile if they cover: a) a record of inbound visitors to regions and to highly frequented sites inside the same regions; b) the monitoring of visitor and trip characteristics (e.g., age, socio-economic status, destination, accommodation); and c) a study of their consumption behavior, expenditure items and economic impact. Likewise, inbound tourist

profiles should comprise a data set that deliver the knowledge of recognized patterns of tourism, providing the number of visitors, destinations, the characteristics of the travelers, their consumption behavior, expenditure patterns and economic outcomes.

1.3. The Issues Related to an Inbound Tourist Profile

1.3.1. Departure from Surveys to an Alternative

From around the year 2000, most countries visited by large numbers of foreign travelers have created inbound tourist profiles by collecting data from official statistics which mainly employ survey methods. It includes demographic information such as the populations and GDP figures of the countries within the top 20 in terms of the volume of foreign tourists, expenditures by main tourism activities, and the prospects of the tourism industry at the central and local government levels. For a better understanding of the current state of tourism profiles, detailed descriptions of foreign cases are given below.

(1) The United States

The Department of Commerce of the US has recently specified tourism activities and expanded the provisioning of inbound profiles to private-sector industries such as rental car and travel agencies. The Bureau of Economic Analysis (BEA) conducts pilot surveys using card data (e.g., credit, debit, and

bank cards) as an alternative, redesigning the survey methods to assume cash spending as well. The U.S. Travel Association in collaboration with Visa and American Express captures the travel activity expenses of each country and publishes these data quarterly in the Destination Travel Insight.

(2) U.K.

The national agency VisitBritain produces inbound profiles at the national and local government levels annually, utilizing data from the International Passenger Survey (IPS) of the Office for National Statistics (ONS). The profile consists of the variables of the rates (%) of the visiting period, ages, the quarterly numbers of visitors, and expenditures by main tourism activities. As research on the utilization of card data as alternative sources is ongoing, the U.K. seeks the solution to the issue of procuring personal data from private card companies.

(3) Canada and Australia

The Canadian Tourism Commission and the Australian Bureau of Statistics (ABS) supply inbound profiles with contents similar to those of the U.S. British Columbia (BC) in Canada produces and offers its own inbound tourist profiles, and the ABS conducts research to take advantage of card data as alternative inbound statistics data and mobile communication data as a source of foreign travelers' movement lines.

From the research of major developed countries, one common factor is that

most countries cast some doubt on traditional survey methods, as discussed below.

First, inaccuracies increase because they rely on predictions, memories, or recall by travelers. Moreover, when tourists are questioned about how much they will spend (spent), where they will visit (visited), and what activities they will undertake (undertook), they face a burden because it is difficult to predict or recall events within the limited survey time before their entry or departure. This memory-dependent method and these time constraints affect the accuracy of travelers' responses, eventually lowering the quality of the data.

Second, samples are collected only at airports and seaports, and the sample size is typically too small to generalize to the total population of inbound tourists by nationality. This sampling error makes it impossible to predict the consumption behavior and expenditures of the tourist population by nation and raises the issue of the reliability of the profile.

Third, as there are no guidelines pertaining to a unified international research method, individual countries conduct surveys independently, preventing cross-country comparisons of the data.

Fourth, the availability and timeliness of profile information are controversial because nearly two years are needed to obtain the results of the survey and report them to the public. For example, to obtain the 2015 inbound profile, the survey should be conducted after the end of each month in 2015; this monthly data is aggregated into one-year data. The processed data will finally be analyzed and published in 2016.

Hence, alternative ways to produce reliable and valuable profile are actively

retrieved by countries in and around UNWTO and each nation explores the potential to replace or compensate for traditional survey methods. At present, one possibly recognized method is to use card data (credit, debit, and bank cards) and mobile phone data.

1.3.2. Inbound Tourist Profile in Korea

Korea has several organizations which report tourism-related statistics, but the country has yet to produce an inbound tourist profile.

One such organization is the Bank of Korea, which is responsible for the Balance of Tourism Account. However, this macroeconomic indicator cannot be used as a microeconomic indicator for a detailed profile. In addition, the expenditures for short-term overseas education should be excluded from the Balance of Tourism Account, because these are not directly related to tourism as a strict standard.

The Ministry of Culture, Sports, and Tourism (MCST) is another organization which produces official national statistics of the International Visitors Survey per year. However, these statistics are not informative of tourism-related economic data, and annual reports are untimely to account for the changes in tourism industry trends, as these reports are available one year later, i.e., after the studied year. In addition to these controversies with the survey method as illustrated above, there is an additional sampling problem with MCST statistics data. Because a sample is surveyed randomly in front of security

checks at airports and ports and not in waiting areas at departure gates, the sample cannot be distributed in proportion to the population by inbound country. Another problem arises as well in that the size of the population at the point which inbound tourists leave Korea cannot be estimated, and the overall expenditures of major tourism activities derived from these samples cannot be calculated.

Tackling these obstacles of surveys, MCST used an alternative method to produce a profile. It included foreign visitors' primary trip activities, consumption patterns, and the scale of expenditures by obtaining two-year transaction data pertaining to inbound tourists (2012~2013) from five credit card companies (VISA, Master, American Express, JCB, and China UnionPay) in 2014, analyzing them every month by nation, region, and major tourism activities (e.g., shopping, lodging, food service, and medical service). As card transaction data accounted for approximately 48% of the Balance of Tourism Account as produced by the BOK, it was possible to determine the movements, consumption patterns, and the expenditure scales of inbound travelers through individual card data. Furthermore, to capture cash spending, MCST attempted to revise the method of the International Visitor Survey to include the ratio of cash to card usage by nation, gender, age, and duration period.

However, in January of 2014, Korea experienced several series of incidents of personal information leakages by major credit card companies and became considerably sensitive and nervous about the protection of private data. Affected by the aftermath of these nationwide scandals, card companies were

inclined to avoid supplying card transaction data to outsiders, and when they did hand over data after grueling discussions and negotiations, very roughly summarized data were delivered to the government, with fees and limited conditions applying. The problem is that card data without individual transaction data cannot produce specified data such as movement lines of foreign visitors or major travel activities expenditures by region, gender, or other variables. MCST faces the constraints of collecting data, and no institutional system supports the utilization of private data for an inbound tourist profile.

1.4. Research Objectives and Research Questions

Although there is strong demand for a tourism profile so as to understand the economic outcomes and effects in Korea, overall circumstances prohibit the government from producing an inbound tourist profile. The validity of the card data method is not verified as an alternative to the survey method, and utilizing private card transaction data causes major concerns related to misuse. Moreover, it is strictly restricted by the Personal Information Protection Law. Therefore, the main objective of this paper is to propose a policy alternative to build an inbound tourist profile in Korea. First, this study will analyze and compare the contents of the profiles of major developed countries to learn what contents the Korean tourism profile should include. Secondly, because card data was recently suggested as an effective alternative able to overcome

the shortcomings of the traditional survey method, this paper will analyze and compare the card data method and the survey method in terms of feasibility and desirability. Third, as card data contains individual personal information, a policy alternative to resolve conflict between personal information protection and personal information utilization will be suggested beyond the fortified Personal Information Protection Law and nation's the negative attitude toward openness.

Based on the primary objectives of this dissertation, the following research questions are posited for analysis in this study:

How can the Korean government build an inbound tourist profile to understand tourist expenditures?

To find the answer, the primary question can be specified as shown below.

Question 1: *From case studies of foreign countries, what contents should be contained in the inbound tourist profile of Korea?*

Question 2: *With the newly proposed policy stream of collecting card data as an alternative method to surveys, is it desirable and feasible for the Korean government to utilize this data?*

Question 3: *If the method of using credit card data is advantageous to build an inbound tourist profile, what policy can serve as an alternative to resolve the conflicts between personal information protection and personal information utilization?*

II. LITERATURE REVIEW

2.1. The Significance of an Inbound Tourist Profile

Eurostat (2000) proclaimed that the analysis of inbound tourism becomes crucial and intricate in terms of its practical and economic aspects. In spite of the soaring increase in the demand for information and the number of potential users, official statistics harbors the defects of being incapable to explain expenditure patterns. Hence, alternative data should be integrated into these data sets.

Xenias and Erdmann (2011) stated that the travel and tourism industry in the United States creates jobs and exports services. Comprehensive information about arrivals, consumption, destinations, and other factors should be compiled by the federal as well as by local governments. The monthly international visitor profile of the state of New York, showing present status of foreign visitors, the market situation, expenditures by country, and the outlook on these events is experimentally reported.

2.2. Alternative Data: Credit, Debit and Bank Cards

The U.S. Bureau of Economic Analysis (2013) stated at the 26th Meeting of the IMF Committee on the Balance of Payment Statistics that alternative data - credit, debit, and bank card data - has more advantages for estimates of

inbound expenditures than survey data collected from travelers' recalls or predictions. Card data combined with other data can be utilized to predict foreign visitors' travel spending, as it is possible to identify foreign visitors from the personal information of their card data. On the other hand, education or health-related travel along with business travel should be excluded.

Acir and Baran (2010) emphasized that credit card data can be an innovative solution to reduce the cost of producing tourism statistics, but there is a paradox that while the Bureau of Tourism recognizes the importance of estimates of travel expenditures, they do not have the budget to produce statistics. With regard to tourism statistics, credit card records give a highly detailed picture of tourism expenditures and an acute understanding of tourist behavior. Using the data taken from credit card companies to calculate tourism statistics is an absolutely more precise, easy and cost-effective way to collect expenditure data compared to traditional border and household surveys, which require considerable planning, human resources and funding. Moreover, past experience shows that the longer durations tourists have, the more difficult it is to assume expenditures because traditional surveys rely on recalls and the receipts of tourists. Credit card data are economical in determining travel spending and travel patterns at a small cost and with greater coverage than survey data. However, credit card data should be combined with survey data due to the absence of cash spending, and clarifying the objective of collecting data from card companies and utilizing the data is the government's and the policymaker's responsibility.

Riker and Vila-Goulding (2013) contend that credit card data have crucial meaning as an alternative to survey data with regard to the expenditures of inbound tourists. Although card data do not contain cash expenditures, it does account for more than 40% of coverage as compared to survey data, and over time, the data accumulates and becomes more informative. Regarding the increasing consumption patterns of credit cards, this data includes various values and utilities. With collaboration from Visa, whose cards account for 43% of the U.S. card market, the expenditures of Brazilian tourists on goods and services were published.

2.3. Personal Information Protection vs. Utilization

Sim (2013) urged that big data can be defined as a vast volume of data, such as credit card data, which has variety of purposes and real-time velocity, thus creating value. The government intensifies the political support of big data in that it produces information goods. However, the utilization of big data causes substantial concerns about privacy protection and personal information protection, and institutional measures with regard to data utilization and personal information protection has been clearly established.

Kim & Im (2013) urge that there is worldwide trend toward sharing public and private data, but this introduces a dilemma in terms of personal information protection. The principle is that data should be open and facilitated, but the problem of personal information protection should be resolved in advance. Hence, it is necessary to revise the law to allow private

information to be utilized in a limited manner while protecting personal information.

Jeong (2007) states that given the nature of modern business activities, personal information is utilized, provided, and shared in diverse ways, but the field in most need of help is the marketing area. It collects and analyzes changes in the trends of consumers and strives to grasp the dispositions and concerns of consumers for marketing and advertisements. Such private information is not only collected directly from information agents but also produced through transaction or utilization records. Such a profiling process makes the data very useful, but there is no distinct provision in the Act on the Promotion of Information and Communications Network Utilization and Information or the Personal Information Protection Law as to whether an agreement with the information agent is needed when personal data produced from transactions is collected and used to analyze overall trends. In addition, the advantages of personal information utilization for analysis of the overall trends of customers and markets are enormous, whereas the probability of privacy invasion is low. In any event, the ambiguity of the law reduces the utilization of this personal information.

Jeong (2010) contends that the recent trend is for technologies and services pertaining to the use of personal information to grow rapidly while the privacy invasion problems will increase as well. Accordingly, it is crucial to improve institutional law to distinguish privacy data from relatively less vulnerable data by analyzing the types and characteristics of personal information.

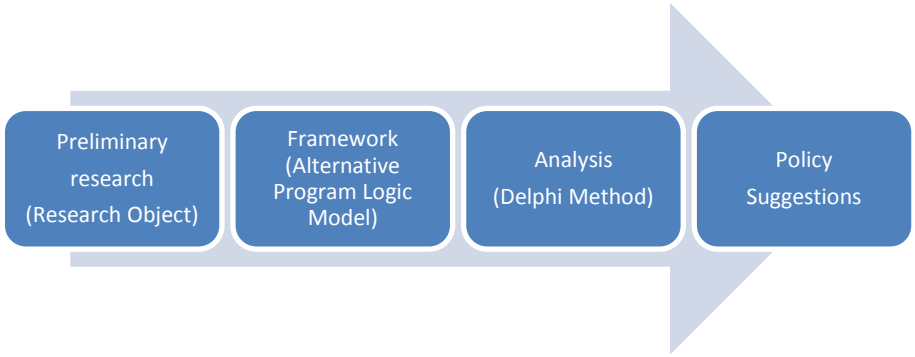
III. RESEARCH FRAMEWORK AND METHODOLOGY

3.1. Research Procedure

The focus of this thesis is on how the Korean government can build an inbound tourist profile in an effort to understand tourist expenditure patterns. To be specific, it focuses on the contents that should be contained, a comparison of potentially desirable methods (surveys and collection of card data) the Korean government can use, and the policy alternatives that may be needed to resolve the conflict between personal information protection and utilization. To expedite the answering of these questions, preliminary research regarding the research objectives defined the current state of these profiles in Korea and in developed countries. Second, the study utilizes an alternative program logic model as a framework with which to characterize the overall state of policies on an inbound tourist profile and to provide the basis for the analysis. In the next stage of the analysis, the investigation of the method by which to construct the profile is linked to the process of an *ex-ante* evaluation during the policy analysis, in contrast to an *ex-post* evaluation, which is implemented after the completion of the policy execution. An *ex-ante* evaluation includes future projections presuming that the proposed policy or program has been implemented, whereas an *ex-post* evaluation assesses the results of an implemented policy or its impacts. In addition, because there are

no available theories or data with regard to an inbound tourist profile, this type of analysis requires intuitive predictions, a qualitative approach and subjective methods to predict the future impact of policies (Roh, 2003). To comply with these conditions, the Delphi method, a methodology in which a group of experts with intuitive judgment share ideas and reach a consensus is applied in this study to analyze the qualitative phases of a profile policy and to project the results. To the end, policy suggestions for an inbound tourist profile are extracted from the implications stemming from the results of the Delphi analysis. The entire research procedure is shown in Fig. 1.

Fig. 1. Research Procedures

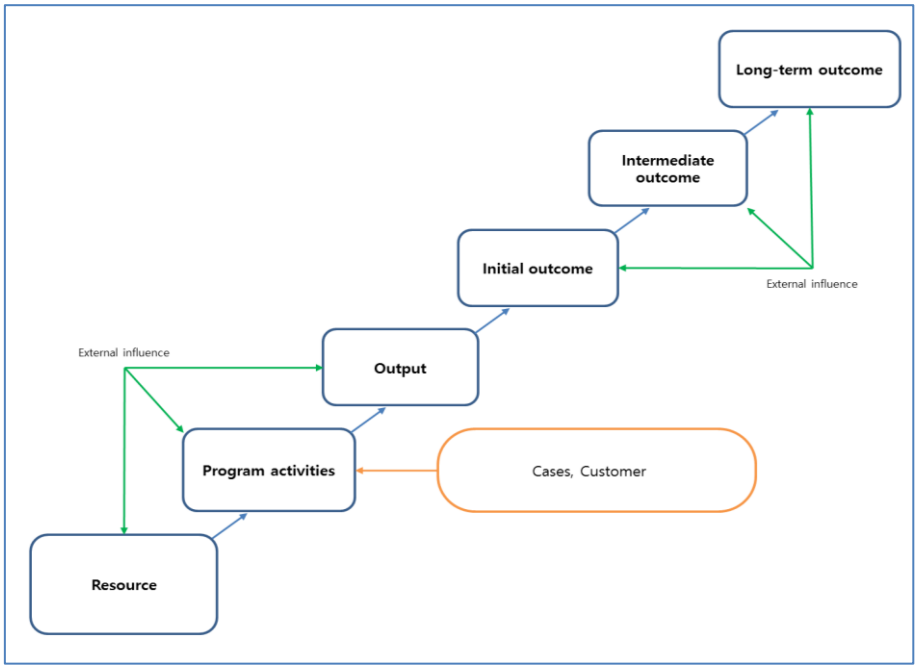


3.2. Framework: Alternative Program Logic Model

As mentioned earlier, this study applies an alternative program logic model as a framework and analyzes every step of the construction of a profile based on it. First, according to reviews of the concept of a program logic model, it consists of diagrams and text that describe the key causalities between

program agents and the problems to be solved based on the program logic (Roh, 2006). The program logic model is also defined in terms of "how the program theoretically works to achieve its benefits for participants. It is an "If-Then" sequence of changes that the program intends to set in motion through inputs, activities, and outputs." (Hatry, 1996) Moreover, it is a plausible and sensible model to explain how the program works under specific circumstances so as to discern the problems and resolve them. Thus, the main components of program logic model are the input (resources), activities, output, initial outcomes, intermediate outcomes, and long-term outcomes, and its function is to verify the causal relationships among them. (Bickeman, 1987) As a summary of the concept of the program logic model, Fig. 2 displays a horizontal logic model illustrating the input (resources), activities, output, initial outcomes, intermediate outcome, and long-term outcomes.

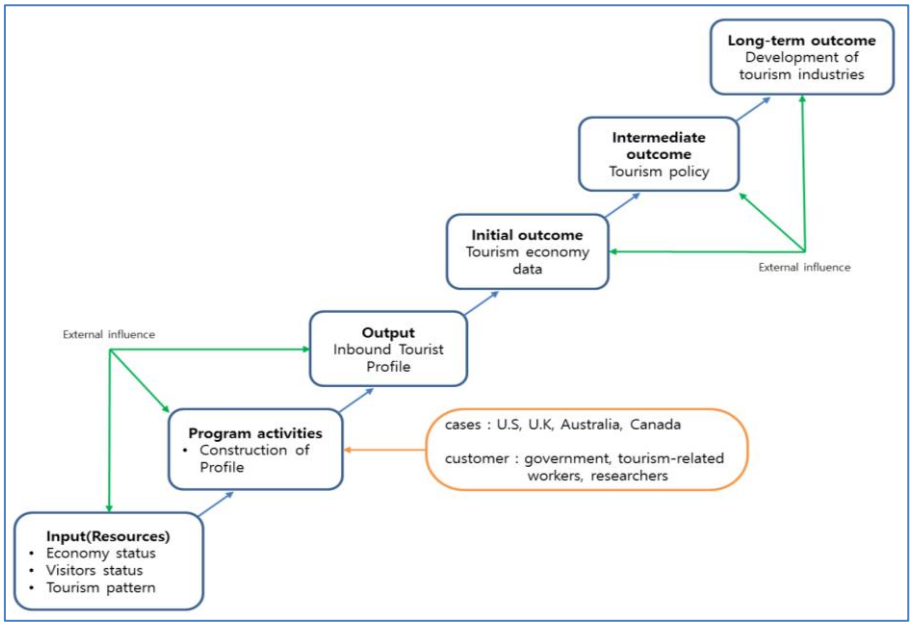
Fig. 2. Alternative Program Logic Model



“Inputs include resources dedicated to or consumed by the program. Examples are money, staff and staff time, volunteers and volunteer time, facilities, equipment, and supplies. Activities are what the program does with the inputs to fulfill its mission. Activities include the strategies, techniques, and types of treatment that comprise the program's service methodology. Outputs are the direct products of program activities such as products, goods, and services. A program’s output should produce desired outcomes. Outcomes are benefits for participants during or after their involvement with a program. These use plural and sequential outcomes known as an outcome structure. Initial outcomes are the first benefits or changes participants’ experience and are those most closely related to and influenced by the program’s outputs. Outcomes may relate to knowledge, skills, attitudes, values, behavior, condition, or status. Intermediate outcomes link a program’s initial outcomes to the longer-term outcomes it desires for participants. They often are changes in behavior that result from the participant’s new knowledge, attitudes, or skills. Longer-term outcomes are the ultimate outcomes a program desires to achieve. They represent meaningful changes for participants, often in terms of their condition or status.” (Hatry, 1996) Therefore, the alternative program logic model can be conceived as shown in Fig. 3 if adjusted to an inbound tourist profile. Input is equal to resources existing in the form of official statistics, administrative data, survey data and card data. The primary contents of resources are the economic statuses, visitor statuses and tourism patterns. Program activities refer to profiling, and the output is the inbound tourist profile. With regard to structured outcomes, the initial outcome is the

acquisition of tourism economy data in that the profile will give an integrated view of tourism to the public and private sectors in terms of the macro and micro economy. Next, the intermediate outcome serves to enhance the tourism policies of government at the central and local levels, as understanding the tourism status through an interpretation of accurate data makes government policies more effectively and more reliably proposed and implemented. Eventually, the development of the tourism industry can be a long-term outcome that the inbound tourist profile intends to attain. Additionally, the cases dealt with here are those of major advanced countries when they produce profiles, such as the U.S., U.K., Canada, and Australia. These cases can provide directions pertaining to the factors that the tourism profile should include and effective methodologies which can be used to build a profile. The customers of the profile are those who demand the profile data, such as governments, tourism-related workers and researchers.

Fig. 3. A Framework of the Inbound Tourist Profile



3.3. Methodology: Delphi Method

This section introduces the research methodology used in this paper. Based on the framework of the alternative program logic model, Table 1 describes briefly how each stage of the framework is analyzed.

In this study questioned every stage of the expert Delphi panel as part of the analysis, and decisions were made after a few rounds of discussion. The Delphi panels are composed of four professionals selected based on their education and careers related to tourism and statistics. They are conversant in their fields, with long and productive educational backgrounds, and the working careers of the interviewees ranged from four to twelve years. The interviewees delivered in-depth analysis, insightful projections, and advisory comments for profiling. More specific information about the Delphi panel is introduced in Table 2. For an analysis of resources, they provide professional advice and information with which to build a prototype of an inbound tourist profile. During the methodology analysis stage, two rounds of questions and answers were exchanged among the panelists; they conveyed commentary information about two profiling methodologies rather than attempting to select the better method. In the end, they emphasized the necessity and significance of an inbound tourist profile while analyzing the output and outcomes of this type of profile.

Table 1. Research Design for the Inbound Tourist Profile

Program Logic Model	Object	Analysis & Criteria	Method
Resource	Economy status Visitors status Tourism pattern	Comparison among foreign cases & Creation of the profile prototype - U.S, U.K, Canada and Australia	Delphi Expert Panel (Review & Determination)
Program Activities	Methodology of building a profile - Survey method - Using card data	Comparison by policy analysis criteria ● Desirability - Effectiveness - Efficiency ● Feasibility - Political - Administrative - Financial - Legal - Technical	Delphi Expert Panel (Questionnaire & Determination)
Output	Profile - Built by survey - Built by card data	Comparison by criteria - Availability	Delphi Expert Panel (Questionnaire & Determination)
Outcome	Initial, Intermediate, Long-term Outcome	Analysis -Significance -Necessity	Delphi Expert Panel (Comments)

Table 2. Characteristics of the Delphi Panel

Field	Panel	Education	Career
Statistics	A	Ph.D in Statistics	11-year professional in statistics Government official
Statistics	B	Ph.D in Statistics	12-year professional in statistics Employed at a government related statistics institution
Statistics	C	Ph.D in Statistics	8-year professional in statistics Employed at a government related statistics institution
Tourism	D	Ph.D in Tourism	12-year professional in tourism and statistics Professor
Tourism	E	MPA (Master of Public Administration)	4-year career in tourism Government official
Tourism	F	B.S.	4-year career in tourism Government official

For data collection, the main data sources were the results and comments from the panelists. Secondary sources included government reports, international organization papers, articles, and websites.

3.3.1. Resources: Creating Prototype

As the first step of the analysis, the contents of the inbound tourist programs of the developed countries of the U.S., U.K., Canada, and Australia were analyzed and compared. Based on these results, a prototype of an inbound tourist profile for Korea is suggested and then reviewed by the expert panelists.

3.3.2. Program Activities: Comparative Analysis

Applied to the framework of the inbound tourist profile, program activities are referred to when constructing the profile. Thus far, surveys have been the method most commonly used to devise an inbound tourist profile. However, recognizing, as described earlier, inherent problems such as the collection of unreliable data from tourists when recalling, sampling errors, multiple guidelines and the reduced availability caused by the untimeliness of publications, many developed countries vigorously seek alternatives to the survey method, and card data is regarded as promising in this regard. In accordance with this stream, this paper compares two methods preliminarily in terms of the differences as well as the benefits and disadvantages of survey and card data. The expert panel was also asked to analyze the two in terms of their desirability and feasibility. Moreover, utilizing the Delphi method, their ideas are integrated into a conclusion. "The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts." (Herold, 1975) "The experts complete questionnaires in two or more rounds. After each

round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. It is believed that during this process, the range of the answers will decrease and the group will converge towards the "correct" answer. Finally, the process is stopped after a pre-defined stop criterion (e.g., number of rounds, the achievement of a consensus, and/or the stability of results) and the mean or median scores of the final rounds determine the results." (Rowe and Wright, 1999)

However, in this paper, the Delphi panel is questioned once because the panelists have a deep understanding of inbound tourist profiles through their careers and achievements, and they gave similar systematic analyses of the construction of such a profile.

3.3.2.1. Desirability

Desirability is a criterion with which to measure how desirable policy results are if a policy alternative is chosen and implemented. The desirability of a policy alternative can be altered by the objectives of a policy. Among the various criteria of desirability, widely applied criteria are effectiveness, efficiency, satisfaction, equality, and consistency (Roh, 2003). Accordingly, this study focuses on two representative criteria: effectiveness and efficiency.

(1) Effectiveness

Effectiveness is a standard by which to judge how much a policy objective is

attained, that is, to assess the achievements of a policy. As effectiveness is a criterion for evaluating the desirability according to the amount of the achievement, regardless of its inputted cost, the more accomplished the objectives are, the more effective the policies are. One type of approach in this case is the utilitarian approach, which suggests 'the greatest happiness of the greatest number' of people. At this point, the greatest happiness means the total amount of increased happiness regardless of the cost (Roh, 2003). The effects of a policy are the originally intended results and the side effects when the policy attains its goals (Jeong, 2010). This research analyzes which policy alternatives can accomplish the original goals of a profile to determine the scale of the tourism economy.

(2) Efficiency

While effectiveness is a criterion which focuses on the achievements of an aim, efficiency is a standard by which to measure the cost to achieve the aim, generally defined as the ratio of the output of a policy implementation to the cost required to accomplish the goal. According to the efficiency criterion, although the degree of attaining aim is high, it is not desirable if the cost is too high (Roh, 2003). In a narrow sense, the most efficient policy alternative yields the greatest output with the same cost, or it inputs the least cost with the same output. However, in a broad sense with regard to efficiency, the most efficient policy has the greatest policy effect with the same cost, or inputs the least cost with the same policy effects (Jeong, 2010). Pareto's optimality is the standard when the efficiency criterion is applied to policy analysis, but there is

an issue related to measuring unquantifiable inputs (costs) and outputs in the public sector. Therefore, this paper analyzes two policy alternatives by comparing the cost (input) with the hypothesis that both profiling methods will bring about the same policy effects of determining the tourism economy.

3.3.2.2. Feasibility

Feasibility presents the degree of potentiality that a policy alternative will be selected. The ultimate value of a policy alternative is judged by the benefit the policy brings about when it is adopted and whether or not it is chosen and implemented. Therefore, the value of a policy alternative is determined by its degrees of desirability and feasibility. Moreover, the concepts of desirability and feasibility are closely related, as they are both important standards having critical influences on whether or not a policy alternative is chosen. The feasibility criteria include the individual feasibilities of its political, administrative, financial, legal, and technical aspects. At the same time, they function as constraints during evaluations of alternatives (Roh, 2003). This paper adjusts the political, administrative, financial, legal, and technical feasibility aspects when analyzing the two profiling methods.

(1) Political Feasibility

Political feasibility represents the possibility that a policy alternative will be chosen and implemented by a political system. In other words, it is the feasibility that a policy alternative is supported by the dominant political power, such as policymakers, policy executors, targeted groups, the public,

and the media during the policy decision and implementation process. A feasible policy is essentially accepted politically, or at least should not be unacceptable (Bardach, op. cit., p.24). Political unacceptability results from a combination of too many objections and too low a level of support, or either of them. However, policy analysts should not stay still when facing unacceptability. If a favorable policy alternative appears to be unacceptable, they can consult about the measures that should be taken to change the conditions (Roh, 2003). Political feasibility is determined by stance of stakeholders, including major participants in policy alternatives, their available resources, and the relative orders of available resources (Dunn, 1981). Therefore, by measuring these three major variables, it is possible to predict political feasibility and to conjecture which variables have subjective features. Practically, assessments of political feasibility are conducted by means of policy Delphi, which uses the same projection procedures as general Delphi (Roh, 2003).

(2) Administrative Feasibility

Administrative feasibility is the possibility of using the administrative organization and manpower for policy implementation. If a selected policy is not able to be implemented, the effectiveness of the policy decision disappears (Roh, 2003). The administrative feasibility criteria are the authority, institutional commitment, capability, and the support of the organization (Patton and Sawicki, 1993).

(3) Financial Feasibility

Financial feasibility is related to a phase of policy implementation; it refers to whether it is possible to secure the finances to implement the policy or policy alternatives. If the meaning of financial constraints is broadened, it includes not only the budget of the government and policy institutions but also socially available resources. Likewise, provided the feasibility is judged from the perspective of the economic feasibility of an entire society, financial feasibility is regarded as identical to economic feasibility (Jeong, 2010, Yoo, 1993).

(4) Legal Feasibility

Legal feasibility represents the possibility that policies or alternatives are not controversial with regard to the law. Specifically, it indicates the possibility that legal constraints do not exist during the policy implementation process. However, in many cases, law is a form of policy. In such a case, it reasonable to interpret legal feasibility broadly, meaning that a policy or law should not raise controversy or conflicts with other laws and should maintain consistency with other policies. Therefore, regarding legal feasibility, not only legal constraints but also other constraints have significant meaning (Jeong, 2010, Kang, 2002, MacRae & Wilde, 1979).

(5) Technical Feasibility

Technical feasibility denotes the possibility of implementing a policy or a policy alternative with the present available technology; it is also used to

indicate whether a proposed policy alternative can attain its aims effectively and appropriately. Concerning the former meaning of technical feasibility, if the overall level of technology relative to a policy is sufficiently developed to select it, technical feasibility is closely related to whether professionals related to the specific technology can be secured within an organization. The latter meaning of technical feasibility, i.e., that a policy alternative is relative to goal attainment, is in line with effectiveness and suitability. In some sense, these analysis criteria indicate the characteristics of desirability. When effectiveness criteria evaluate technical feasibility, they focus on whether the intended effects are brought about or will be brought about such that a proposed policy or program can accomplish its goals; in other words they assess whether a suggested policy achieves its aim and is related to the criteria of technical feasibility. In contrast, when evaluating whether or not the effects of a policy are desirable, the classification is the desirability criteria (Roh, 2003).

3.3.3. Output: Availability

In the final stage, the output of the survey method and the card data are compared in terms of availability, with the key factor of timeliness because it enables statistics to capture current trends and increase the availability of the profile to customers. Timeliness is related to the gap between the criteria time when the statistics were compiled and the time when the statistical results are published. The closer the gap is, the more timely the statistics are.

3.3.4. Initial, Intermediate and Long-term Outcomes

Assuming that the inbound tourist profile is completed, the initial (tourism economy data), intermediate (tourism policy) and long-term outcomes (development of tourism industries) are examined by the Delphi expert panel to determine the significance and necessity of constructing the profile for the ultimate purpose of developing tourism in Korea.

IV. RESULTS OF ANALYSIS

4.1. Resources

4.1.1. Comparative Analysis of the Contents

As the inbound tourist profile is produced by the nation as a unit, foreign visitors are identified by nation, and the current situation of inbound travel can thus be depicted. This enables central and local governments as well as tourism industries to foresee the trends and devise tailored marketing strategies. For these reasons, the U.S., U.K., Canada and Australia have constructed inbound traveler profiles, and the following general and common information as fundamental components of the profile can be extracted an investigation of these profiles.

The first consideration is the economic statuses of the countries of foreign travelers. Now that it is possible for tourism-relative economic data to be conjectured according to the overall economic scale of a country, the preferred profile presents basic economic indicators, including the GDP, consumer prices, exchange rate, trade data, and the unemployment rate, most of which are derived from statistics compiled by international organizations such as the UN and the OECD.

The second factor is the visitor status, meaning the number of inbound travelers by gender, age, stay duration, and the total population of the

countries ranked within the top ten. Most developed countries have reported past tourism inclinations based on time series analysis by collecting administrative data from disembarkation cards. Traditionally, the number of travelers across borders has shown a positive correlation with the amounts of expenditures; thus, the number of visitors is considered as a primary component when producing a profile, although immediate causality between the numbers of tourists and economic expenditures is not ensured. For instance, the number of tourists from a country declines due to a depreciated exchange rate, or it increases owing to the launch of a visa exemption program even when an economically and relatively minor country is involved.

The third is tourism pattern: that is, visiting purpose, main tourism activities, expenditures, duration of stay, destination, revisit, and so on.

The detailed profile contents of four countries are compared and summarized in Table 3 below.

The U.S. Travel Association of the U.S. Department of Commerce, the Canadian Tourism Commission, the Australian Bureau of Statistics, and VisitBritain of the U.K. all produce inbound tourist profiles. In particular, the U.S. has publicized them not only at the federal government level but also at the state government level. All four countries have formulated existing official statistics or the economic status of tourist profiles as well as administrative data on visitor statuses, and all have published the results of International Visitor Surveys for tourism patterns. The U.S. and Australia have in particular utilized credit card data, including foreign visitors' transactions, as an alternative to compensate for the shortcomings of survey data.

Table 3. Comparison of Resources

Scope	Indicator	U.S.	Canada	Australia	U.K.
Economic status	GDP	○	○	○	○
	Unemployment Rate	○	○	○	
	Consumer Price	○		○	
	Trade	○		○	○
	Exchange Rate			○	○
Visitor status	Visitor Volume, Rank	○	○	○	○
	Total Population	○		○	
	No. of Visitors by gender	○	○	○	○
	No. of Visitors by Age	○	○	○	○
	No. of Visitors by Duration of Stay	○	○	○	○
Tourism Pattern	Revisit	○	○		
	No. of Travelling Companions	○			
	Duration of Stay(Average)	○	○	○	○
	Frequency of Stay	○			
	Visiting Period		○	○	
	Itinerary		○		
	Purpose	○	○	○	○
	Main Activity	○	○	○	○
	Transportation	○	○	○	
	Total Expenditure	○	○	○	○
	Average Spend	○	○	○	○
	Spending Field				○
	Spending Industry	○		○	○
	Rank of Spending Industry	○	○	○	
	Satisfaction	○			
	Places Visited	○	○	○	○
Data Source	Official Statistics	○	○	○	○
	Administrative Data	○	○	○	○
	Survey Data	○	○	○	○
	Credit Card Data	○		○	

Furthermore, U.S. inbound market profiles, which are produced only after adjusting with credit card data, have exclusively presented expenditures according to the numbers of inbound travelers along with classifications by gender, age and duration of stay among other indicators. A characteristic of credit card data, the accumulation of data in a consecutive order, is also taken advantage of to draw the movement line of foreign travelers and to keep track of their spending. Noticeably, card data collected by only two private credit card companies - American Express and Visa - are used to estimate the scope and scale of expenses. On the one hand, it is beneficial in that credit card data do not rely on travelers' recall to avoid sampling error. On the other hand, this method entails the issue of utilizing personal information in the midst of classifying and aggregating expenditures by various criteria. Notwithstanding, compared to the various problems with survey data, the U.S. Travel Association does not perceive the personal information issue as offending because the coverage of credit card data is very efficient in comparison with the data collection cost, and the final output is not provided in the form of personally identifiable information.

4.1.2. Considerations when Producing a Korean Prototype of a Profile

(1) Economic Status by Inbound Country

Economic status indicators can be obtained from international organizations such as the UN, IMF, OECD and the World Bank. Consumer prices, mainly

used as an inflation indicator, denote changes in expenses when typical consumers purchase goods and services within their income ranges. The employment indicator represents the employment rate and the unemployment rate as reported by an international organization such as the ILO or OECD. The balance of payments is induced from the IMF, the UN and from the Korea International Trade Association (KITA), and from among these figures the income from tourism can be determined from the Compendium of Tourism Statistics of UNWTO. Combined with economic status, hours per day for leisure and personal care, as produced by the OECD, the potential for foreign tourism can be discerned.

(2) Visitor status by Inbound Country

Total population by nation is gained by UN population statistics and is used in profiling, as it is regarded as representative of latent foreign tourists. The UNWTO Compendium of Tourism Statistics and the Ministry of Justice of Korea supply statistics regarding the number of visitors by nationality, gender, age, duration of stay, airports, seaports, airplanes, and other factors.

(3) Tourism Pattern by Inbound Country

The tourism patterns that could be drawn from International Visitor Surveys - official statistics – are shown below.

- Condition of Korea Tour: Type of tour, Frequency of visit/Purpose of visit, Time one decided to visit Korea, Comparisons with other countries before the visit, Considering factors before the visit, Route of obtaining

tour information of Korea, Plan for visiting other countries after/before Korea, Travel companions, Duration of stay, Accommodation type, Places visited, Impressive places, and Activities during the stay.

- Expenditures in Korea: Travel expenses, Shopping items, Shopping conditions
- Evaluation of Korea Tour: Satisfaction level of Korea tour, Impressive things on visit to Korea, Inconvenience or complaint experiences, Intention to revisit Korea within three years, Intention to recommend Korea to others, Changes of the image of Korea after the visit.

However, International Visitor Surveys have several limitations in that they depend on the memories of 12,000 tourists from 16 countries, and the outputs of these surveys tend to be published one year after the researched year. These are problems common to most surveys on foreign visitors.

As noted earlier, because tourism patterns appear to vary depending on the individual, the more classified and specified the information are, the more worthy they become. The Delphi panelists, professionals in statistics, also felt strongly that private data is useful to make up for the limitations of surveys and official statistics. To illustrate this, both mobile communication data to capture tourist movement lines and time-sequence credit card transaction data make it possible to assume foreign visitors' behavior by aggregating expenditures by industry; furthermore, these data can be utilized as alternative information with which to understand the behaviors of travelers who revisit Korea. Nonetheless, while economic status indicators and visitor status indicators are not associated with the problem of data collection by nation,

total expenditures, main trip activities, and types of industry in the tourism patterns indicator are difficult to regard as primary indicators owing to the non-sampling error in International Visitor Surveys. In consequence, similar to the U.S., credit card transaction data are discussed as an alternative method to estimate tourists' expenses.

(4) Overview of the Korean Government's Pilot Project

To determine the potential and constraints when using credit card data in Korea, this paper reviews a pilot product conducted by the Ministry of Culture, Sports and Tourism (MCST) of Korea to create an inbound tourist profile in 2014, in cooperation with private credit card companies from 2012 to 2013.

According to the Korean government's analysis, foreign credit cards available in Korea are Visa, Master Card, American Express, JCB, and China UnionPay, and transaction data including the card number, user information, transaction date and time, industry information and payment are compiled on a real-time basis. There are approximately 12 million transactions a day, 350 million a month, and 4,200 million a year. In 2013, 12,176 thousand foreign tourists came to Korea, a total 11,800 credit cards were used, and aggregated expenditures amounted to 7.8 trillion dollars. This total expenditure of credit cards accounted for 48% of the Bank of Korea's tourism income, representing a type of coverage that could be considered to be a macroeconomic indicator. Total expenses were divided into four sectors: the country, business, location, and tourism activities sectors. Specifically, business consists of shopping, lodging, food, hospitals, and transportation; location was split into

metropolitan cities and basic local governments; and tourism activities included sightseeing, sports, medical treatments, and cultural experiences. To examine how different the two profiling methods are and what could be gained from the two outputs, tourism activities resulting from the International Visitor Surveys were matched with the business sector information from credit card data, as shown in Table 4.

Table 4. Tourism Activities and Businesses

Tourism activities (Survey)	**Business (Credit Card data)**
Sightseeing	Shopping (e.g., duty free shops, department store, shopping center, discount store, fashion accessories, cosmetics, ect.), Lodging(hotel and other accommodations), Food(restaurant, drinking service, coffee, bread, etc.)
Sports	Ski resort, Golf course, Leisure sports, etc.
Medical treatment	General hospital, Private hospital, Plastic surgery, Dental clinic, ophthalmological hospital, oriental medical clinic, etc.
Cultural experience	Auditorium, Theater, Public bath, Beauty salon, Skin care shops, etc.

Although a pilot study by the MCST excluded cash spending from the overall expenditure volume, it has been the only report which analyzed the scale and distribution of foreign visitors' expenses by nation, region and tourism business. In short, throughout this credit card project, the Korean government appears to have confidence when constructing an inbound tourism profile, and assuming that personal information is permitted to be used to create a profile, more useful and meaningful information would be produced.

4.1.3. Suggestion for a Korean Profile Prototype

Rooted in the results from three analyses of foreign countries, the pilot project by MCST, and the expert analysis, a prototype of a profile for three inbound countries, each with a large volume of visitors in 2013, is proposed, as shown in Table 5. The scopes of the profile prototype are economic status, visitor status, credit card expenses, and tourism pattern. Referring to economic indicators of the World Bank, the economic status of the profile indicates the GDP, the economic growth rate, consumer price inflation, and imports and exports. Visitor status demonstrates visitor numbers and the ratio by gender, purpose, and age from the entry and departure statistics of the Ministry of Justice. The amounts and ratio of foreigners' spending activities as drawn from credit card transaction data are classified by region, tourism, sports, medical treatment and cultural experiences. Tourism patterns represent the ratios of the type of travel, the frequency of visits, total expenses per person, number of companions, durations of stays, and main trip activities, citing the results of the International Visitor Surveys conducted by the MCST.

Table 5. Pilot Profile

Economic Status	China	Japan	U.S.
GDP(current $, trillion)	9	5	20
GDP growth(annual %)	7.7	1.6	2.2
Inflation of Consumer price(annual %)	2.6	0.4	1.5
Exports of goods and services(% of GDP)	26.4	16.2	13.5
imports of goods and services(% of GDP)	23.8	19.0	16.5

Source: http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG, World Bank (Economic Indicator)

Visitor Status		China		Japan		U.S.	
		number (person)	ratio (%)	number (person)	ratio (%)	number (person)	ratio (%)
Total (Growth Rate)		4,326,869 (52.5%)	35.5	2,747,750 (-21.9%)	22.6	722,315 (3.5%)	5.9
	Flight attendance	541,793	12.5	51,840	1.9	57,818	8.0
Gender	Male	1,550,785	41.0	1,166,162	43.3	398,568	60.0
	Female	2,234,291	59.0	1,529,748	56.7	265,929	40.0
Purpose	Tourism	3,139,867	72.6	2,633,959	95.9	529,922	73.4
	Business	126,011	2.9	27,292	1.0	10,809	1.5
	Official	3,162	0.1	1,753	0.1	15,306	2.1
	Education	102,433	2.4	8,976	0.3	2,456	0.3
	Others	955,396	22.1	75,770	2.8	163,822	22.7
Age	0~10	135,637	3.6	50,875	1.9	42,452	6.4
	11~20	232,763	6.1	157,065	5.8	36,802	5.5
	21~30	908,285	24.0	523,618	19.4	107,297	16.1
	31~40	859,805	22.7	498,949	18.5	105,812	15.9
	41~50	784,745	20.7	568,034	21.1	129,344	19.5
	51~60	548,598	14.5	483,892	17.9	136,215	20.5
	61~70	245,303	6.5	319,385	11.8	75,764	11.4
	71~	69,940	1.8	94,092	3.5	30,811	4.6

Source: Entry and departure statistics, 2013, Ministry of Justice, (Reporting statistics)

Credit card expense		China		Japan		U.S.	
		Expense ($ Million)	Ratio (%)	Expense ($ Million)	Ratio (%)	Expense ($ Million)	Ratio (%)
Credit card total expense ($)		340,248	48.1	131,185	18.5	66,924	9.5
Regional Expense	Seoul	229,899	69.8	87,958	80.6	41,972	65.9
	Busan	20,509	6.2	7,461	6.8	2,373	3.7
	Daegu	2,649	0.8	523	0.5	1,110	1.7
	Incheon	24,325	7.4	3,749	3.4	3,029	4.8
	Gwangju	964	0.3	145	0.1	177	0.3
	Daejeon	1,265	0.4	220	0.2	309	0.5
	Ulsan	946	0.3	272	0.2	561	0.9
	Gyounggi	23,629	7.2	4,122	3.8	9,973	15.7
	Gangwon	1,219	0.4	114	0.1	340	0.5
	Chungbuk	1,021	0.3	284	0.3	198	0.3
	Chungnam	1,115	0.3	705	0.6	286	0.4
	Jeonbuk	794	0.2	164	0.2	454	0.7
	Jeonnam	837	0.3	148	0.1	155	0.2
	Gyoungbuk	2,343	0.7	672	0.6	807	1.3
	Gyoungnam	2,225	0.7	611	0.6	1,470	2.3
	Jeju	15,795	4.8	1,938	1.8	504	0.8
	Sejong	0	0.0	0	0.0	0	0.0
Tourism	Lodging	87,608	31.2	23,592	35.1	21,359	48.4
	Food	24,396	8.7	5,717	8.5	10,209	23.1
	Duty-free shopping	80,015	28.5	19,650	29.2	2,307	5.2
	Department store and Discount store	51,253	18.2	7,254	10.8	5,405	12.2
	Fashion shopping	31,993	11.4	9,590	14.3	3,747	8.5
	Other shopping	2,817	1.0	666	1.0	487	1.1
	Tour Agency and Tour Package	2,830	1.0	825	1.2	644	1.5
Sports	Golf	1,839	74.6	282	77.7	458	65.1
	Leisure town (Amusement Park)	346	14.0	22	6.1	77	11.0
	Leisure Sports	156	6.3	31	8.5	20	2.8
	Sports Center	67	2.7	15	4.1	74	10.5
	Ball Sports	50	2.0	11	3.0	70	10.0
	Ski	7	0.3	2	0.6	4	0.6
Medical treatment	Private Hospital	8,170	58.2	943	54.4	1,218	37.5
	General Hospital	3,590	25.6	363	20.9	1,199	36.9
	Dental Clinic	874	6.2	84	4.8	398	12.3
	Pharmacy	611	4.4	62	3.6	189	5.8

Credit card expense		China		Japan		U.S.	
		Expense ($ Million)	Ratio (%)	Expense ($ Million)	Ratio (%)	Expense ($ Million)	Ratio (%)
	Oriental Medicine Clinic	284	2.0	200	11.5	115	3.5
	Other Medical Expense	509	3.6	83	4.8	126	3.9
Cultural Experience	Beauty Salon	1,177	65.2	127	10.5	312	53.7
	Skin Massage	226	12.5	328	27.1	113	19.4
	Spa and Bathing	144	8.0	717	59.2	45	7.7
	Performance	198	11.0	32	2.6	93	16.0
	Training, Experience and Sightseeing	60	3.3	8	0.7	18	3.1

Source: a report on expenses of foreigners' credit card, 2013, Korea Culture Information Service Agency (Credit card data)

Tourism Pattern (unit: %)		China	Japan	U.S.
Type of Trip	Individual tour	53.8	67.7	98.0
	Group tour	42.8	15.3	1.8
	Air-tel tour	3.4	17.0	0.2
Frequency of Visit (Past 3 years)	1	74.3	30.9	67.4
	2	12.2	17.6	12.2
	3	4.9	14.1	7.4
	More than 4	8.7	37.4	13.0
Total Expense per person	Below 500$	7.6	24.8	30.6
	Above 500$ ~ Below 1000$	15.1	40.7	20.9
	Above 1000$ ~ Below 1500$	18.6	18.0	13.6
	Above 1500$ ~ Below 2000$	16.1	7.1	12.4
	Above 2000$ ~ Below 3000$	17.4	5.1	9.3
	Above 3000$	22.2	3.3	11.7
	Above Maximum	3.1	1.0	1.6
Companion (Except myself)	1 person	40.6	53.3	57.3
	2 persons	20.2	17.0	21.2
	Above 3 persons	39.3	29.7	21.5
Duration of Stay	1~3 days	8.1	58.2	14.2
	4~6 days	64.4	34.1	23.7
	7~10 days	10.6	3.9	18.9
	11~60 days	9.1	2.7	25.6
	Above 61 days	7.9	1.1	17.7

Tourism Pattern (unit: %)		China	Japan	U.S.
Main trip Activities	shopping	37.5	27.8	10.9
	Epicureanism travel	12.3	17.4	2.3
	Hot spring, Spa	1.4	3.3	1.7
	Rest & Relaxation	2.8	1.4	2
	Beauty treatment Tour	0.4	4.4	0.2
	Medical treatment Tour	0.6	0.4	0.1
	Entertainment / Game	3.6	3	6.1
	Casino	0.9	1.7	0.1
	Theme Park	3.1	0.6	1
	Sports Activities	2	0.6	1.2
	Leports Activities	0.6	0.6	2.6
	Professional sports activities	0.1	0.2	0.7
	Industrial Inspection (Industry Facilities etc.)	0.1	0.6	0.5
	Training, Study, Research	2.1	2.3	2.4
	Meeting, Convention, Academic Conference, Exhibition	1.7	3.6	2.8
	Business	3.3	7.7	24.5
	Visiting old palaces/historical sites	3.5	5.7	10.9
	Natural landscape	10.6	3.8	10.5
	Performance, Folkloric event, Festival	2.3	8.4	1.3
	Museum, Gallery	1	1.5	3
	City tour	8.2	1.1	7.4
	Experience cultural tradition	1	0.8	1.4
	Others	0.6	2.7	4.7
	None	0.3	0.4	1.8

Source: International Visitor Survey, 2013,Ministry of Culture, Sports and Tourism (Survey statistics)

Notably, the prototype of the Korean profile markedly reveals some controversy between the survey and the credit card data. For instance, surveyed main activities of tourism patterns do not account for lodging, in contrast to the credit card profile, showing expenses for China at 25.8%, Japan at 18% and the U.S. at 31.9%. Likewise, for shopping, surveys relying on

travelers' memories show China at 37.5%, Japan at 27.8% and the U.S. at 10.9%, whereas actual credit card spending shows China at 50.5%, Japan at 51.3% and the U.S. at 24%. Regarding medical treatment tours, main activities from the International Visitor Survey show China at 0.6%, Japan at 0.4%, and the U.S. at 0.1%, while credit card expenses indicate China at 4.1%, Japan at 1.3% and the U.S. at 4.8%.

As a result, for the contents of the inbound tourist profile, economic status, visitor status, and tourism patterns are found as basic common indicators, being composed of credit card data and survey results.

4.2. Program Activities: Construction of a Profile

4.2.1. Analysis by Desirability

How desirable a construction method is refers to its effectiveness and efficiency, and the experts analyzed two profiling methods- surveys and the use of credit card data - with these two criteria.

4.2.1.1. Effectiveness

The effectiveness of a profile can be measured by whether or how much the ultimate aim of a profile - that is to say, determining the economic scale of inbound tourism - will be attained. According to the interviewees, because the survey method relies on tourist recall, spending amounts on basic activities such as lodging and food are apt to be depreciated, yet expenditures on major

trip activities tend to remain in focus. In contrast, should a proper sampling method be devised, a survey which enables researchers to interpret the emotional and mental aspects of tourists could deliver useful information regarding the degree of satisfaction, reasons why travelers visit certain tourist attractions and spend money on them, and similar measures. As a result, although the survey method has fundamental limitations such as sampling error, the method is also expected to be effective if used for other qualitative purposes rather than for capturing aspects of the tourism economy.

Panels judge utilizing credit card data as a relatively effective way to achieve the profile goal; at the same time, side effects may be realized. Together with non-personal identifiable information, average expenditures per foreign visitor by region and type of business could be estimated, and the number of hotel rooms vis-à-vis lodging expenses per month would attest to the shortage or oversupply of hotel rooms, offering a guideline about how many rooms should be provided. Moreover, by analyzing monthly expenses, the correlation between the leading composite index (CI) and the lagging composite index (LCI) could be assumed. Credit card data or mobile communication data yields explicit outcomes about which country's travelers spend where and how much; despite this, the data cannot explain why they spent what they spent.

In conclusion, in terms of the effectiveness of profiling from credit card data, though it is relatively effective for determining the tourism economy to a certain extent, it is not altogether adequate to provide a full understanding of the tourism economy. Integrated profiling through both credit card data and

survey results from the International Visitor Survey is likely to be a comprehensive solution.

4.2.1.2. Efficiency

Efficiency refers to a focus on input, in contrast with the effectiveness of a focus on output. In a broad sense, assuming that policy alternatives bring about the same outcomes (instead of output, as inputs and outputs in the public sector are unquantifiable), it is efficient to choose the least costly policy. Thereby, the efficiency of the two profiling methods is examined by comparing the inputs with the presumption that the outputs of both profiles will yield the outcome of tourism economy data. First, if the input is interpreted into the size of the budget, it consumes a relatively large portion of the annual budget, approximately $320,000, due to its unique characteristic of tourism surveys mainly targeting foreigners. Second, interviewees point out that surveys have a feature of official statistics, i.e., that the timeliness of the reported profile greatly lags considering the high cost; therefore, combined with the known problems of surveys, such as sampling errors and an inestimable population, whether economic subjects (households, firms, and governments) will gain the desired outcomes is highly ambiguous. Accordingly, one statistics expert asserts that this method must be supplemented and modified into a new method to estimate the ratios of cash to credit card transactions. Even if the survey is the only approach which can be used to evaluate foreign visitors' subjective aspects, measuring foreign

visitors' feelings and levels of satisfaction, in a strict sense, is not within the scope of the Statistics Act.

In contrast, credit card data consumes approximately $60,000 from the annual budget, a relatively small amount, and it is relatively easy to assume a benefit-cost effect, possibly producing various additional indicators with the hypothesis that one person uses one card. The interviewees indicated that if weighted values are projected based on credit card data, cash spending could be conjectured. By combining total cash and credit card expenses, the entire tourism outcome can be estimated. However, there are limits in that the use of personal information to obtain detailed results cannot be avoided. Moreover, it is difficult to obtain qualitative reputations of foreign visitors along with formalized quantitative credit card data.

In consequence, with regard to benefit-cost estimations, the inputs of credit card data account for one fifth of the budget of the survey, meaning that, presuming the same outcome of the two profiling methods, using credit card data is more efficient than using the survey. Moreover, survey outcomes appear to be unreliable due to sampling errors and the aforementioned inestimable population. Nonetheless, the benefit of gaining qualitative information from the survey should not be ignored.

4.2.2 Analysis by Feasibility

Feasibility indicates the degree of the capability of implementing a policy, and the profile's feasibilities are analyzed in terms of their political, administrative,

financial, legal, and technical aspects.

4.2.2.1. Political Feasibility

A feasible policy is generally accepted by the dominant policy power, or at least it should not be unacceptable by policymakers, policy executors, targeted groups, the public, and the media. Here, the expert panel indicated that as the International Visitor Survey has been conducted since the 1970s, and the survey has as its subjects foreign visitors, it gives the impression of the absence of resistance politically and emotionally. Moreover, the experts indicate that from the respondents' standpoints, it may be a burden given the numbers of questions while waiting for departure; together with language obstacles and tiredness, this may lead to unfaithful answers.

With regard to using credit card data, the current situation is that as the significance of private data and concerns over personal information leakages increase, the utilization of credit data becomes unwelcome. However, the experts refute this also, saying that if transaction data were not specifically personalized but instead anonymously grouped, the use of such data would not be problematic politically or emotionally. Seen from the MCST pilot research on the credit card data of foreign visitors in 2014, a report on foreign travelers' transactions attracted great interest from news and other media, projecting that credit card data would not face political objections if the issue of personal information utilization was tackled.

Therefore, the political feasibility of the survey appears to be greater than that of using credit card data due to, in short, path dependency, whereas the utilization of credit card data must be enhanced with a meticulous mechanism

in order to protect privacy and in turn be accepted by policymakers in the future.

4.2.2.2. Administrative Feasibility

Administrative feasibility is the possibility of utilizing administrative organizations and manpower for implementation. Some panelists indicated that as the survey has been maintained for years with a constant budget, it seems to be stabilized in terms of administrative feasibility, though the size of the organization and the number of personnel have scarcely been accrued. Other panelists confess the difficulty in securing an additional professional organization and personnel for the inflated International Visitor Survey because statistics production is a relatively low-priority feature compared to other tasks. They add that cooperation with other ministries and organizations with regard to conducting a survey is not smooth, and administrative constraints exist in that the survey implementation process needs multiple consents and admissions by related organizations such as airports, seaports and the Ministry of Justice.

In contrast, the experts assess that the organizations and personnel able to deal with credit card data are capable, but the most crucial factor is to secure the data. Because private credit card companies, whose purposes are to maximize profits, avoid providing transaction data for free, administrative support or reasonable compensation for them should be offered in return; thus, a consensus to create a new social value needs to be considered in the form of

cooperation between government and private card companies. For example, types of business should be standardized according to the Korean Standard Statistical Classification, as each credit card company classifies data with their own criteria.

Hence, the administrative feasibility of the survey method is, to some extent, guaranteed, but it needs to be enhanced with organizations and manpower to respond to the growing survey scale and for cooperation among related public organizations. The administrative capacity of using credit card data is potentially positive, but better coordination and greater cooperation among the government and the private sector are needed.

4.2.2.3. Financial Feasibility

Financial feasibility refers to the capability of securing money for policy implementation purposes. As illustrated in the discussion of administrative feasibility, the interviewees also confess a high degree of hardship to procure the additional budget for the International Visitor Survey, as the Korean economy rarely depends on the expenses of foreign visitors, or the tourism industry, during periods of deficit of the tourism balance of account, and the imminence of statistics production is less emphasized in comparison with other businesses. Here exists the ambivalence of the Korean government, which it is definitely aware of the significance of statistics but is less generous with regard to investing in the statistics sector.

The cost of using credit card data is relatively low compared to that of the

survey, but there is room for meeting the cost increase if credit card companies require a fee to supply the data to governments. Nevertheless, even with the purchasing fee being as high as one fifth of the survey cost, various outcomes can result without additional investment, implying that once an administrative and political consensus on credit card data is achieved, the financial feasibility will increase. It is recommended by experts to formulate a policy to cooperate with the KFTC (Korea Financial Telecommunications & Clearings Institute), the payment institution responsible for operating financial information networks and retail payment systems such as check clearing and a giro system, in order to obtain credit card transaction data without charge and with greater efficiency.

As a result, using credit card data is more plausible when seeking to attain financial feasibility than the survey, as purchasing credit card data is relatively economical and even more efficient should close collaboration with other organizations be encouraged.

4.2.2.4. Legal Feasibility

Legal feasibility presents the possibility that policies or alternatives are not in contrast to laws. The legal feasibility of the survey has been ensured, as it has abided by the procedures and scopes of the Statistics Act.

However, before introducing the use of credit card data, this paper will speculate upon the necessity of personal information utilization, the cases of foreign countries and that of Korea, and experts' analyses of this issue

because using credit card data entails the use of private data; at the same time, it plays a key role in profiling but is vehemently debated globally.

(1) The necessity of personal information use when analyzing credit card data

Profiling through credit card data is necessarily connected to personal information utilization. For instance, if transaction data are created mechanically and electronically in the midst of using credit card and then treated with statistical methods and a profiling process, they will be transformed into remarkably useful information for marketing and exploring new items. Moreover, notably, it will be scarcely possible to violate privacy, assuming that the personal information is used anonymously, so as to analyze the trends of customers and markets. Specifically, if person-identifiable factors (e.g., names, Social Security numbers, and addresses) are eliminated and adjusted with anonymity, the potential to breach the privacy of information subjects is minute. This non-identifiable information generally carries low levels of security now that individuals' fundamental rights are less infringed compared to person-identifiable information such as names, ID numbers, and addresses. Moreover, when innominate information is easily combined with other data and altered into person-identifiable information, it should be as essentially protected as personal information. The level of information security is determined by the factors of the type, analysis, synthesis, sharing with third parties, and the technology used with non-identifiable information. Specifically, the greater the possibility of invading privacy by non-identifiable information is, the higher the established security

level for personal rights should be.

In any event, non-identifiable forms of information such as behavior information, inclination information, and location information are prevalent throughout the world. In this context, profiling through credit card data is inevitable when utilizing personal information and applying it with guaranteed anonymity under the law. Thus, by investigating the present foreign and Korean cases, this paper analyzes the legal feasibility of using credit card data.

(2) Foreign cases

The privacy protection acts passed by the U.S., Europe, and Japan add the concepts of personal records and particular identifying factors to personal information. Personal records are a bundle of information concerning a person's name, ID number, address, and telephone number. At present, the general practice of processing personal information is to gather various types of personal data and treat it as a set. Thereby, a set of personal information can have social meaning and be considered as a personal record having particular identifying factors (name, ID number) which makes it possible to discern the subjects of the information. Korean laws do not mention the terms of personal records, which contain specific identifying and distinguish identifiable personal information, from non-identifiable personal information, whereas the privacy protection acts of the U.S., EU, U.K., and Japan identify the concepts of personal information and personal records (including specific identifying) and discriminate identifiable personal information from non-identifiable personal information so as to enhance the status of the law and the

use of personal information. The definitions of personal information in the U.S., the EU, the U.K. and Japan are given below.

① U.S.

The Privacy Act of the U.S., legislated in 1974, defines the concept of a personal record in Article 552a.

"Each agency that maintains a system of records shall maintain in its records only such information about an individual as is relevant and necessary to accomplish a purpose of the agency required to be accomplished by statute or by executive order of the President. The term 'record' means any item, collection, or grouping of information about an individual that is maintained by an agency, including, but not limited to, his education, financial transactions, medical history, and criminal or employment history and that contains his name, or the identifying number, symbol, or other identifying particular assigned to the individual, such as a finger or voice print or a photograph."

The U.S. Privacy Act describes personal records which contain specific identifying information and clarifies factors which can function as identifying information. Moreover, to offers a guideline for strong privacy protection and at the same time to promote innovations enabled by use of personal information, the White House publicized the Consumer Privacy Bill of Rights in 2012.

② EU

EU Data Protection Directive (also known as Directive 95/46/EC) is a directive admitted by the European Union in 1995 to define personal data as follows.

“'Personal data' shall mean any information relating to an identified or identifiable natural person ('data subject'); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity.”

Furthermore, the European Parliament approved the draft of the General Data Protection Regulation in 2014 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

③ U.K.

U.K. Data Protection Act, which was promulgated in 1998, defines personal data as shown below.

“Personal data means data which relate to a living individual who can be identified (a) from those data, or (b) from those data and other information which is in the possession of, or is likely to come into the possession of, the data controller, and includes any expression of opinion about the individual

and any indication of the intentions of the data controller or any other person in respect of the individual."

④ Japan

The Act on the Protection of Personal Information, legislated in 2003, defines personal information as shown below.

"Personal information means information about a living individual which can identify the specific individual by name, date of birth or other description contained in such information (including such information as will allow easy reference to other information and will thereby enable the identification of the specific individual)"

However, in June of 2014, Japan's Strategic Headquarters for the promotion of an Advanced Information and Telecommunication Network Society announced an amendment to Article 23 of the law starting in 2015.

"Personal data that is processed into data with a reduced identifiability of persons can be transferred without the consent of the person."

If the personal data is anonymized, pseudonymized, or otherwise processed such that there is less plausibility that the person can be identified, the consent of the person will not be obligated for the use of such data, as the Japanese government considers that the utilization of this processed data brings

companies valuable information about consumers and makes it possible to develop new products or services; in addition, it regards the application of IT and big data as a critical factor to success. These changes of the Japanese government move towards activating the utilization of personal data while still protecting the privacy of individuals.

⑤ OECD

The OECD also publicized its Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data in 1980, revising it in 2013. The definition of personal data in this case is given below.

"Personal data means any information relating to an identified or identifiable individual (data subject)."

In addition, as a unique international organization in which member countries cooperate, the OECD defines the concept of transborder flows of personal data and establishes the basic principles of international applications.

"'Transborder flows of personal data' means movements of personal data across national borders. A Member country should refrain from restricting transborder flows of personal data between itself and another country where (a) the other country substantially observes these Guidelines or (b) sufficient safeguards exist, including effective enforcement mechanisms and appropriate measures put in place by the data controller, to ensure a continuing level of

protection consistent with these Guidelines."

To cope with the global information era, the OECD also clarifies personal information and its transfer and promotes its use while respecting privacy.

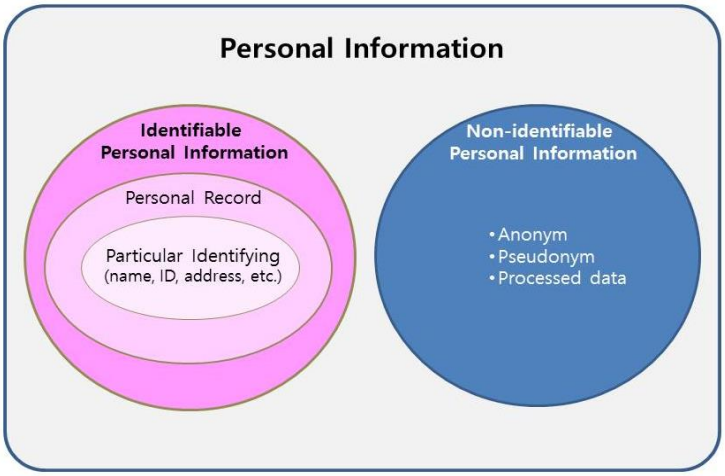
(3) Korean case

The legal background and current situation pertaining to personal information protection and utilization in Korea are such that 14 laws concerning privacy in total are scattered throughout the public and private sectors. The Personal Information Protection Act is applied to both the private and public sector; the Act on Personal Information Protection of Public Organizations applies to the public sector and the Act on the Promotion of Information, and Communications Network Utilization and Data Protection applies to the private sector. Other individual laws are the Act on Credit Information Use and Protection, the Act on Location Information Protection and Use, the Electronic Government Act, the Resident Registration Act, the Act on National Taxes, the Communication Privacy Protection Act, the Act on Health and Medical Services, the Witness Protection Act, the Law of Real Name Financial Transactions, and Criminal Law. However, this study focuses on the Personal Information Protection Act and Act on the Promotion of Information and Communications Network Utilization and Data Protection, as these two laws are directly related to profiling. Article 2 of the Act on the Promotion of Information and Communications Network Utilization and Data Protection gives the following definition of personal information.

“Personal information shall mean information pertaining to any living person, which contains the code, letter, voice, sound and image, etc. that make it possible to identify such an individual by his/her name and resident registration number, etc. (including the information which, if not by itself, makes it possible to identify any specific individual if combined with other information).”

In contrast, if non-identifiable personal information is not combined with other identifiable personal information such that this information is used under an anonym, the information is not personal information as defined by the Personal Information Protection Act and Act on the Promotion of Information and Communications Network Utilization and Data Protection. Thus, generally, personal information is regarded to be protected when non-identifiable personal information combined with identifiable information can confirm one’s personal identification. Moreover, by analyzing the lawful meaning of personal information in Korea, it is concluded that the definition of personal information contains the concept of personal records and specific identifying. That is, personal information consists of a set of personal records which include particular identifying information (e.g., name, ID number, address), as shown in Fig. 4.

Fig. 4. Concept of Personal Information



Meanwhile, the collection and use of non-identifiable personal information that cannot be used to discern individuals in the form of anonyms, pseudonyms, or processed data are not clarified by law and should not be banned. Therefore, there is a legislative vacuum regarding the use of non-identifiable personal information in Korea.

Next, the present situation of Korea concerning the utilization of personal information raises the following issues. First, private card companies are evasive with regard to providing data. Thus far, now that government typically provide data to the private sector, it is quite rare for private card companies to supply data to governments. The most critical reason for this is the illegal leakage of personal information in January of 2014 by large credit card companies such that the event battered the Korean society. To prevent the recurrence of accidents, the government is geared toward blocking the use of personal information with enforcement measures such as suspension of

businesses. Thus, credit card companies are reluctant to release even non-identifiable personal information because they would like to forestall unnecessary misunderstandings rather than create value via the use of credit card data. Thereby, there may be difficulties obtaining a constant supply of data to governments.

Second, as seen from the pilot research by the MCST, even the government is afraid to take responsibility for utilizing personal information. This is why it clarified and emphasized the statement that personal information was not used when publicizing the results of foreign visitors' credit card data.

Thus, as described in the laws, it is natural that when non-identifiable personal information combined with other information can lead to identification, such information shall be protected as personal information. However, the utilization of non-identifiable personal information that cannot be used to identify individuals should be legislated to facilitate useful information.

(4) Experts' analyses of the legal feasibility of credit card data

Given that credit card transaction data is extracted from systems, it is likely that leakages of personal information are more likely to occur as compared to the use of surveys. To address this issue, a number of individual privacy protection laws must be unified into one special law. It is also quintessentially necessary to institute the concept of the use of non-identifiable personal information in accordance with global trends. Notwithstanding, this issue continues because establishing a consensus between the congress and the

government and the amendment of laws require much time. In short, the legal feasibility of using credit card data has potential but will require much time.

4.2.2.5. Technical Feasibility

Technical feasibility refers to the possibility of implementing a policy with currently available technology. In a statistical survey, technology refers to the population definition, sampling design, questionnaire design, reliability of the survey process, the data processing and analysis methods, and the analysis of the results. Professionals assert that the statistical level of the International Visitor Survey is as high as international standards, but the population information is too scanty to design the sample size. Therefore, the International Visitor Survey determines it using the entrant ratio of the previous year. For example, presuming the trend that Japanese entrants increase consistently year by year, if a depreciated exchange rate reduces the number of incomers in 2014, the ratio of 2013 entrants overestimates the sample size of 2014.

On the other hand, credit card data is accumulated in a database in real time; moreover, if possible, a high level of analysis skill can develop versatile informative data in response to policy needs. Yet, the problems are as follows: first, individual credit card companies use different codes of business to classify transaction data, Secondly, estimations of the ratio of cash to credit card spending are unavailable. Nevertheless, the positive viewpoint about the technical feasibility of credit card data appears to be dominant because experts

predict that these shortcomings could be supplemented.

In summary, the technical feasibility of the survey method is high because the statistical level of the International Visitor Survey is assessed to meet international standards in spite of certain defects of the survey. In addition, credit card data is also feasible but must compensate for its technical obstacles.

4.3. Output

Concerning the output, which is a direct product of the main activities, such as the inbound tourist profile, this paper compares the availability of the outputs resulting from the survey method to that when using credit card data and illustrates four aspects of availability as predicted by experts.

A survey report is untimely because it is publicized once a year, eventually degrading the availability of the profile. In addition, surveys can provide multiple instances of referential data about visiting purposes, subjective feelings, levels of satisfaction, the frequency of visits, and other such data, but such information is not directly related to estimations of the tourism economy. To illustrate, surveys present low frequencies of medical trips, unlike large-scale expenditures; meanwhile, the high frequency of nature sightseeing trips has a small impact on the domestic economy.

Regarding the use of credit card data, monthly reports are publicized in a timely manner, enhancing the availability of the profile. Profiling through credit card data provides information coincident with the ultimate goal of the profile by presenting summed and detailed amounts of expenses.

In the end, experts deliver general opinions about the availability of the profile, stating that the profile can be analyzed from four points of view: the economic indicators, basic data for an inbound tourism policy, marketing, and the provision of travel information.

First, the profile is highly available as an economic indicator. Among macroeconomic indicators, the monthly composite index consists of the leading composite index, the coincident composite index and the lagging composite index. Thus far, there has been no study on how large expenditures of inbound tourists are accounted for considering the scale of the Korean economy. Foreign visitors evidently increase the amount of money in circulation, but this factor has not been reflected in the composite index yet; hence, the profile is expected to be an insightful economic indicator.

Second, the profile is useful for the creation of inbound tourism policies. Based on the combination of data regarding monthly trip activities, experiences, durations of stays, the frequency of revisits, the profile could help in the design of new strategic policies such as visa exemption programs to increase consumer spending.

Third, the profile is a good marketing source. Profiles are used to develop targeted and customized marketing strategies through data about which a country's visitors mainly become involved in as well as the certain businesses they frequent.

Fourth, tourism information can be provided to foreign visitors. Information about past trip activities can offer previews to upcoming foreign tourists such that they set up travel plans based on the information. Hence, tourism

marketing and the provision of tourism information are engaged in two-way interactions.

4.4. Initial, Intermediate, Long-term Outcomes

The alternative logic model holds that after constructing the inbound tourist profile, expected outcomes are the provision of tourism economy data (initial outcome), the creation of a tourism policy based on the data (intermediate outcome), and the development of tourism industries (long-term outcome). Accordingly, on the assumption that the profile will bring benefits to participants through the initial, intermediate and long-term outcomes, this study highlights and describes the significance and necessity of an inbound profile.

4.4.1. The Significance of an Inbound Tourist Profile

Thus far, the Korean government has focused on merely enlarging the volume of inbound tourists, having no numerical data to measure the tourism capacity to refurbish changing tourism industries and no macro-economic speculations about how much inbound tourists' spending influences the national economy. Thus, the experts mentioned the significance of a profile from three perspectives. First, from a governmental perspective, an inbound tourist profile is important because it functions as evidence of the current status, such as a shortage of hotels and/or a medical tourism infrastructure, by determining

which businesses earn which amounts of money and by uncovering corroborative facts about the impact of inbound tourists' expenses on the macro-economy. Second, in the private sector, the profile represents significant leverage for active marketing, maximizing travelers' expenses. Specifically, inspecting inbound tourists' expenses by region and business is greatly valued, as it will be fundamental data with which private companies will judge their investments. Third, in terms of foreign travelers, the profile is highly objective information with which they can plan their movement lines and engage in various tourist activities. In the case of the U.S., there is a tendency for foreign visitors who use a profile have longer stay durations and greater frequencies of revisiting. In consequence, the significance of the profile is highlighted in that the three participants in tourism – the government, industry, and tourists - will gain benefits from the profile in the form of a foundation of judgments affecting policies, as leverage for strategic marketing, and as objective information for tourists.

4.4.2. The Necessity of an Inbound Tourist Profile

From the government's perspective, given the absence of objective and scientific information thus far, the Korean government must produce a profile in order to plan, implement, evaluate, and obtain feedback about inbound tourism policies. Moreover, considering that governments produce, supply, and advance inbound tourist profiles in developed countries, the Korean

government lags behind, confronting constant demands from relevant academies and research institutions.

On the other hand, in the tourism industry, as in the cases of the U.S. and Singapore, specified industries' inbound tourist profiles such as those related to car rentals, hotels and credit card companies, which are also produced by governments, verify the necessity of a profile for marketing, management, and investment. In addition, the tourism industry has direct and indirect impacts on other industries, catalyzes new types of business, and eventually creates new jobs.

Furthermore, the experts describe that to determine not only tourists' cross-sectional (the year in question) but also longitudinal sectional (time series) characteristics, a profile is necessarily a comprehensive mechanism and should be used and managed systematically.

Accordingly, the necessity of producing an inbound tourist profile cannot be overemphasized, as there is a social need for the government to produce such a profile, and the private sector can refer to it for various aspects of business, in the end creating new services and generating additional income.

V. CONCLUSION AND POLICY SUGGESTIONS

5.1. Results

The objective of this study was to construct an inbound tourist profile to determine the contribution of the tourism industry to the Korean economy. Given this primary goal, the contents the profile should include, the method most desirable and available to construct it, and the policies that are necessary to solve the controversy between personal information protection and utilization are specifically researched. Adopting the framework of an alternative logic model to analyze an inbound tourist profile, eight stages – input (resources), main activities (profiling), output (profile), initial outcomes (tourism economy information), output (inbound tourist profile), initial outcomes (tourism economy information), intermediate outcomes (tourism policy), and long-term outcomes (development of tourism industries) – were classified and, based on data collection activities through a literature review, case studies of the methods used by developed countries and interviews with six experts in statistics and tourism, this paper analyzed every stage. As demonstrated in the research results, the contents as the resources of the profile were experimentally composed from a comparative analysis of foreign cases, a pilot survey by MCST, and comments from experts. The main profiling method, the survey, is compared with the alternative method of using

credit card data by policy analysis criteria to find a desirable profiling policy. Considering desirability, this paper concludes that profiling through credit card data is relatively effective in defining the tourism economy, as it makes it possible to estimate and project tourism expenditures at various levels and types, which is the ultimate aim of the tourism profile. Regarding efficiency, because the budget for the survey amounts to five times as much as that for the use of credit card data, and considering that its outcomes are unreliable owing to dependence on responders' memories, sampling errors, and an inestimable population, credit card data appears to be more efficient. Regarding feasibility, there is no political resistance against surveys, as surveys have been used for more than 40 years, whereas the utilization of credit card data is unwelcome due to privacy issues currently. However, only if supplemented with an elaborate mechanism to protect personal information, using credit card data would increase the degree of political feasibility. The administrative feasibility of surveys is stable and secure to some degree due to the long-term use of surveys, while that of credit card data is potentially positive but should be promoted with greater coordination and cooperation between the government and the private sector. Concerning financial feasibility, using credit card data is more plausible because purchasing credit card data is relatively economical and even more efficient should close collaboration with other organizations be encouraged. Next, the legal feasibility of surveys is ensured under the Statistics Act, while that of credit card data is a subject of fierce debate owing to conflicts between personal information utilization and protection. As a solution to this controversy, the

concept of personal information should be classified into identifiable personal information, which includes personal records and particular identifying material, and non-identifiable personal information. Through such a classification, the use of non-identifiable personal information should be legislated, as in Act on the Protection of Personal Information of Japan, to produce valuable information while still protecting the privacy of individuals. Lastly, the technical feasibility of surveys is high, as the statistical level of the International Visitor Survey is assessed to meet international standards. However, the sample size is determined by the entrant ratio of the previous year because of the severe lack of the population information, which is another controversy of the survey method. On the other hand, the use of credit card data is feasible but requires compensation for technical obstacles such as the unification of different codes of business and estimations of the ratio of cash to credit card spending.

Concerning the output, which is an immediate product of the main activities, specifically the inbound tourist profile, it is related to availability. A profile driven from surveys is untimely because it is publicized once a year; in contrast, profiling through the use of credit card data can publicize monthly, weekly, daily, and real-time reports in a timely manner, thus enhancing the availability of the tourism profile.

On an assumption that a profile will bring benefits to participants through initial, intermediate and long-term outcomes, the significance of the profile is that the three participants in tourism – the government, industry, and tourists - will gain benefits from the profile. First, from a government perspective, the

profile mirrors the current status and the impact of tourists' expenditures on macro-economy, which results in a foundation for policy-making. Second, the tourism industries can gain more leverage for strategic marketing and investment through the profile. Third, in terms of foreign tourists, it is an objective provision of information on movement lines and tourism activities. The necessity of a profile is that the government is required to produce scientific information in order to plan, implement, evaluate, and obtain feedback about inbound tourism policies as well as fulfill the diverse social needs for a profile. Moreover, the private sector needs it for the references for the strategic aspects of business, in the end creating new services and income sources to the economy.

5.2. Policy Suggestions

5.2.1. Policy Implications on the Content of an Inbound Tourist Profile

By analyzing the inbound tourist profiles of developed countries, this paper establishes a prototype of an inbound tourist profile regarding three major inbound countries - China, Japan, and U.S. -. From the analysis of the profiles of foreign developed countries, the economic status, visitor status, and tourism patterns are determined as the basic common indicators. The numeric data from credit card transactions reflect the current economic situation of tourism, and subjective assessments of travel experiences in the survey present the

main interests of tourists. If possible, examining the contrast between travelers' activities and actual expenditures can enable the government and the tourism industry to find what should be strengthened in the policies and marketing strategies.

5.2.2. Policy Implications for the Methodology of the Profile

Given the existing problems of the survey method, the use of credit card data is suggested as an alternative to the survey method. Thereby, this research analyzes two methodologies of profiling, finding that each has its own characteristics and strong and weak points. To attain the ultimate goal of an inbound tourist profile, it is evident that profiling through the use of credit card data outweighs the survey method, as it provides data about the scale of expenditures and estimates the scale of the tourism economy; it also enables the participants of the tourism industry to capture the trends and economic contributions of the profile and formulate appropriate policies and strategies. However, this quantitative approach cannot demonstrate the qualitative aspects of tourism, such as the degrees of satisfaction, the purposes for visiting, and other such aspects. This explains why the survey method is indispensable for profiling. In conclusion, although the use of credit card data is proposed as an alternative to the survey method so as to obtain a comprehensive set of tourism data, integrating the useful points of the survey method and the use of credit card data can make the profile more informative and valuable.

On the other hand, as the tourism economy consists of expenditures of cash spending and credit card transactions, the survey method should be revised to estimate the ratio of cash to credit card transactions in order to estimate the scale of cash spending, though this requires an additional investment of the budget as well as additional manpower and time.

Lastly, provided that the Personal Information Protection Act is amended to secure the utilization of non-identifiable personal information, it is more likely that a profile driven from credit card data can produce more specified and meaningful information.

5.2.3. Policy Implications for Personal Information Utilization

In line with the global context that large amounts of data, such as big data and IT technology, play a key role in business success, and the use of personal data is promoted, a new paradigm is required in Korea regarding policy pertaining to the utilization of personal information. Additionally, there is growing levels of demand for collecting and applying personal information, as the technology related to the utilization of personal information for marketing strategies or advertisements advances at an unexpectedly rapid rate.

However, according to the Act on the Promotion of Information and Communications Network Utilization and Data Protection, the definition of personal information broadly includes even non-identifiable personal information, not clarifying the use of non-identifiable personal information

such that it constrains supplies of personal information from private credit card companies. Moreover, due to the aftermath of a personal information leakage by credit card companies in 2014, various privacy protection laws broadened the definition of personal information to prevent a recurrence, leading to constant conflicts between protection and utilization. On the other hand, in other countries where similar information leakages have occurred and political resistance against the usage of personal information exists, they now adopt the concept of non-identifiable personal information and make use of personal data, there are certain implications pertaining to the use of personal information. It is inevitable for Korea that personal information should be divided into identifiable personal information and non-identifiable personal information. In addition, legal interpretations of the protection and utilization of this data should be elaborated. Moreover, a special privacy law prior to individual privacy laws and general laws should be enacted.

Lastly, from the perspective of governments, compensation for credit card companies is necessary in return for their supply of credit card data to the public sector. In contrast, private credit card companies should turn their eyes from merely accumulating interior marketing data to creating new value, businesses, and jobs along with the public sector.

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국문초록

외래관광객 프로파일 구축에 관한 연구

한국에 방문하는 외래관광객의 지출액을 중심으로

이소진

서울대학교 행정대학원

글로벌행정 전공

이 연구의 목적은 관광산업의 한국 경제 기여도를 파악하는 일환으로 외래관광객 프로파일을 구축하는 것이다. 프로파일의 콘텐츠는 외국사례의 비교분석을 통하여 한국상황에 적합한 프로파일 프로토타입을 제시하였다. 적합한 프로파일 작성 방법을 모색하기 위해, 전통적 방식인 서베이와 최근 대안적 작성방법으로 논의되고 있는 신용카드 데이터를 이용하는 방식을 비교하였다. 그러나 신용카드 데이터의 사용은 개인정보 사용과 개인정보 보호의 충돌 문제로 격렬히 논의되고 있다. 이 문제의 해결책으로, 개인정보의 개념을 개인기록(personal records)과 특정인식인자(Particular identifying material)를 포함한 식별가능한 개인정보와 통계작성 목적을 위해 활용되어져야 할 비식별 개인정보로 구별할 것을 제안한다.

주요어 : 외래관광객 프로파일, 신용카드 데이터, 개인정보, 식별가능 개인정보, 비식별 개인정보

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